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On the Structure of LOPEZIA.

BY THOMAS MEEHAN.

Lopezia, with its single stamen, is considered as an anomaly amongst onagraceous plants ; but an analysis of L. miniata, *D. C.*, shows the structure to be on the same regular plan with the rest of the order. The genus is described as having a four-cleft calyx, which for practical purposes it may be considered to have,—but two of the segments evidently belong to the corollate system, and two of the petals to the staminate axis, making the arrangement, from a structural point of view, to be a two-cleft calyx, four petals, and four stamens.

It may be well to observe here, that in consequence of the spiral nature of the growth of plants, the different parts of what we term the same axis are not developed simultaneously. Stamens, petals, sepals and leaves, are, therefore, though apparently from the same axis or verticel, rarely of the same size or form, and perhaps a careful microscopic examination might show that they never are. We may assume that the parts of the verticel which have the priority of development, will have at times a mechanical as well as physiological influence on the form or direction of the later and weaker parts ; and when the contraction of the spiral line is very rapid, and the axes of the different verticels brought in close contact, the lowermost and strongest influence the one above.

This influence is clearly traced in Lopezia. Lindley remarks (*Vegetable Kingdom*, page 724) that "there are really two stamens, one perfect and bearing an anther, the other sterile and in the form of a spoon-shaped petal." This spoon-shaped petal is evidently of the same axis, but with a priority of development, which enables it to grasp with its lamina the anther of the weaker stamen. In its expansion it thus draws the stamen down with it, which, in turn, grasping the pistil by a winged filament gives an irregular direction to the central axis by this simple mechanical means. The progress of this development is very interesting. The lamina of the sterile petal grasps the anther till long after the pollen sacs have burst, and remains fast in its hold until some insect or other external agency touches the petal, when the stamen is released with great force, and the petal springs backwards instantaneously on to the already expanded and spreading calyx, and the stamen at the same time bends back in an opposite direction, scattering its pollen on the back of the insect or the other disturbing cause. If this liberation has not been effected at an early age, the stamen flies back at once into a position regularly corresponding to the sterile petal on the opposite side ; but if early the grasp it has on the pistil by its clasping filament prevents it doing so. The whole arrangement with the progress of the development seems the most effectual contrivance that could possibly be devised to prevent a flower from fertilizing its own stigma.*

Beneath these two stamens are two gland-bearing petals, which the analyzer will have no difficulty in deciding to be two stamens early developed, and partaking, in consequence, of a petaloid character. By the overlapping of the bases when young these have been pushed out so as to be finally developed in one direction, and beneath them are two perfect petals, also twisted to go in one direction by the same law.

We now come to the four-cleft calyx, and we notice that no sooner are the segments fairly expanded than the two weaker ones take the direction towards each other which characterizes the sets above them, leaving the two-cleft calyx to hold its position unchanged as such. These petaloid sepals have evidently been brought down to the position of the true sepals mechanically, by a temporary cohesion. If we assist very lightly a flower to open it bursts easily into two parts, almost precisely like the two-cleft calyx of Circæa, its next affinity, showing clearly that its most natural division is on the binary plan.

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* This elasticity has been noticed in *Lopezia racemosa*, Cav., by Curtis in Bot. Mag. t. 254.

It may be further noted in regard to *Lopezia miniata*, the only perennial suffruticose species I believe, that the smooth stem, which is considered a good character in distinguishing it, is only extant while the plant is in a flowering state. It has two distinct systems of growth. During the earliest it is as hirsute as the other species ; at the conclusion of its early summer growth it starts anew with a growth which ultimately flowers, and it is this only which is destitute of hairs.

These notes are made from cultivated plants.

MAMMALOGICAL NOTICES.

BY J. H. SLACK, M. D.

ANTHROPOPITHECUS TSCHEGO.

Troglodytes tschego Duvérnoy, Arch. du Mus., vol. ix. 1857.

Troglodytes calvus Du Chaillu, Proc. Bost. Soc. Nat. Hist., vol. vii. p. 267, 1860.

Size about equal to that of the *Anthropopithecus niger*. General color black, sometimes grey in old age. Head bald, black and shining; chin of adult bearded. Ears large, much larger than those of the *Anthropopithecus gorilla*, though smaller than those of the Chimpanzee.

Habitat.—The deep forests, and the table lands of equatorial Africa.

Figure of skeleton, Duvérnoy, Arch. du Mus., vol. ix.

Figure of entire animal, Du Chaillu, Equatorial Africa, p. 406.

A fine adult skeleton of this rare anthropoidal ape, first noticed as a distinct species by the late lamented Duvérnoy, has been for some time in the collection of the Academy, and has been regarded until lately as that of the *A. niger*. For a full account of the osteological difference between the two species, I must refer to Duvérnoy's most valuable and interesting paper; though, on placing the skulls of the two animals side by side, their specific differences must be apparent to the most superficial observer.

A careful study of the species appears to me to clearly prove the fallacy of regarding the *A. gorilla* as the type of a distinct genus, as has been done by St. Hilaire, the *tschego* combining in a remarkable degree the characteristics of both genera. The cranial crests, so much insisted on as generic characters of the *gorilla*, are to be seen, though in a less degree of development, in the *tschego*, while with the black face of the *gorilla* are associated the large ears of the chimpanzee, and, in fact, all the characteristics of the animal are intermediate between those of the two genera. The names tschego, nshego and nchéko appear, from the accounts of travellers, to have been applied indiscriminately by the natives of equatorial Africa to all species of anthropoidal apes.

To this species has been ascribed the faculty of constructing a nest or shelter among the higher branches of trees, as a protection from the inclemency of the weather during the rainy season. This, according to Du Chaillu, (Equatorial Africa, p. 407) is covered with leaves, compactly laid together, at such an angle as to readily shed the rain. The branches are fastened to the trunk of the tree with vines; the roof is generally from six to eight feet in diameter. Surely this roof-constructing power must place its builder the highest in the scale of the quadrumana.

The only figure of this animal in the flesh that I have met with, is to be found in Du Chaillu's work. The so called young in the same plate, however, resembles in a most remarkable degree a daguerreotype from life of a young *A. niger*, which died some years ago in the Jardin des Plantes at Paris. It must therefore be received "cum grano salis."